Claims

What is claimed is:

1. A flat panel display, comprising:

a flexible substrate;

a single crystalline silicon substrate disposed adjacent to the flexible substrate, wherein the flexible substrate is bonded to the single crystalline substrate using an ion implantation process; and

a plurality of semiconductor devices formed on the single crystalline silicon substrate.

2. The flat panel display of claim 1, wherein the ion implantation process uses a noble gas.

3. The flat panel display of claim 1, wherein the ion implantation process uses a gas selected from the group consisting of hydrogen, helium, xenon, and krypton.

4. The flat panel display of claim 1, wherein the flexible substrate includes a polymer material.

5. The flat panel display of claim 1, wherein the flexible substrate includes a material selected from the group consisting of polymer, plastic, paper, flexible glass, and stainless steel.

6. The flat panel display of claim 1, wherein the plurality of semiconductor devices includes thin film transistors.

7. The flat panel display of claim 1, wherein the ion implantation process includes an ion cut process.

8. An electronic device, comprising:

a flexible substrate;

a single crystalline silicon substrate disposed adjacent to the flexible substrate, wherein the flexible substrate is bonded to the single crystalline substrate using an ion implantation process; and

a plurality of active semiconductor devices formed on the single crystalline silicon substrate.

9. The electronic device of claim 8, wherein the ion implantation process uses a noble gas.

10. The electronic device of claim 8, wherein the ion implantation process uses a gas selected from the group consisting of hydrogen, helium, xenon, and krypton.

11. The electronic device of claim 8, wherein the flexible substrate includes a polymer material.

12. The electronic device of claim 8, wherein the flexible substrate includes a material selected from the group consisting of polymer, plastic, paper, flexible glass, and stainless steel.

13. The electronic device of claim 8, wherein the plurality of active semiconductor devices includes thin film transistors.

14. An electronic apparatus, comprising:

a flexible substrate;

a single crystalline silicon substrate disposed adjacent to the flexible substrate, wherein the flexible substrate is

bonded to the single crystalline substrate using an ion implantation process; and

a plurality of semiconductor devices formed on the single crystalline silicon substrate.

15. The electronic apparatus of claim 14, wherein the electronic apparatus is a flexible flat panel display.

16. The electronic apparatus of claim 14, wherein the electronic apparatus is a flexible printed circuit board.

17. The electronic apparatus of claim 14, wherein the ion implantation process uses a noble gas.

18. The electronic apparatus of claim 14, wherein the ion implantation process uses a gas selected from the group consisting of hydrogen, helium, xenon, and krypton.

19. The electronic apparatus of claim 14, wherein the flexible substrate includes a polymer material.

20. The electronic apparatus of claim 14, wherein the flexible substrate includes a material selected from the group consisting of polymer, plastic, paper, flexible glass, and stainless steel.

21. The electronic apparatus of claim 14, wherein the plurality of semiconductor devices includes thin film transistors.

22. A method of forming an electronic apparatus, comprising:

providing a flexible substrate;

providing a single crystalline silicon substrate

disposed adjacent to the flexible substrate, wherein the flexible substrate is bonded to the single crystalline substrate using an ion implantation process; and

providing a plurality of semiconductor devices formed on the single crystalline silicon substrate.

23. The method of claim 22, wherein the electronic apparatus is a flexible flat panel display.

24. The method of claim 22, wherein the electronic apparatus is a flexible printed circuit board.

25. The method of claim 22, wherein the ion implantation process uses a noble gas.

26. The method of claim 22, wherein the ion implantation process uses a gas selected from the group consisting of hydrogen, helium, xenon, and krypton.

27. The method of claim 22, wherein the flexible substrate includes a polymer material.

28. The method of claim 22, wherein the flexible substrate includes a material selected from the group consisting of polymer, plastic, paper, flexible glass, and stainless steel.

29. The method of claim 22, wherein the plurality of semiconductor devices includes thin film transistors.